James M. Kelley, Ph.D.
Computer Forensic Document Examination
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Curriculum Vitae

Dr. James Kelley has more 30 years experience in military and commercial computer systems development. He has developed, manufactured and sold more than one hundred computer software, hardware and systems products.

Currently, he is using computer based methods to detect of computer generated documents. The methods involve the use scanner, microscopes, computer graphics programs and printers. Non–destructive document examination methods are used.

It is easy to fabricate a mortgage document that accurately recreates an original document from archived digital images of the document. Mortgage loan origination files are scanned shortly after loan close and the resulting digital images are archived in an image database.[1] If an accurate recreation of a promissory note is required, it can be recreated from the archival digital images using graphics software and computer printers.

FDE should be trained in the use of Adobe Photoshop, Illustrator, Acrobat, and other computer image processing packages.

Many FDEs are "handwriting analysts" trained in comparing a questioned signature with unquestioned reference signatures to identify the writer.[2] This skill is useless where the source of the signature is an archived digital copy of the original document and signature.

FDEs frequently opine that if the ink is blue and looks like ballpoint pen ink that the document must be authentic. They are taught to distinguish ballpoint pen ink, from roller ball, gel and fiber tip ink.[3] What they do not acknowledge is that ballpoint ink can be ordered from an ink manufacturer and applied by various other instruments such as a Damilac Machine, a plotter, a CNC machine or an inkjet printer.[4]

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[1] For example, ACS Image Solutions Inc. ("ACS") had contracts with Washington Mutual Inc ("WMI") to scan mortgage documents in Juarez, Mexico until the end of 2008. The scanned images were stored on FileNet per contract for access by WMI. ACS also had contracts to destroy loan origination documents by shredding.

[2] ASTM E2195-05.

[3] ASTM standard E1422-05, Standard Guide for Test Methods for Forensic Writing Ink Comparison, 2005.

It is sometimes possible to distinguish an inkjet printed signature from a ballpoint pen signature by multicolored dots seen under a microscope. An inkjet typically mixes the Cyan, Magenta, Yellow and Black inks on the paper. An intelligent forger will use premixed ink in cartridges to avoid creating the telltale dot pattern characteristic of a forged signature.[5] Some inkjets premix the ink in the cartridge, e.g., HP which eliminate the telltale pattern.

A signature printed on an Ink jet will sometimes show the presence of satellite ink droplets about a signature when viewed by a microscope. The droplets range in size from 10 microns to 50 microns. The droplets will usually be the color of the ink in the signature. The presence of the satellite droplets is conclusive proof that the signature was not made by a pen.

Loan origination documents are standard forms downloaded from a vendor and printed on a black ink laser printer. The forms can be easily recreated on another laser printer. The new form can then be signed in blue ink by an inkjet, a Damilac machine, or other instruments. The resulting documents will fool most people.

Computer generated forgery has been identified in many foreclosure cases. The skill level varies. Some counterfeit documents are easily detected, others are nearly perfect. The skill level of the forgery and the client's budget largely determines the number of tests that are performed on a document.

There is almost no risk in counterfeiting loan documents and the reward can be millions of dollars per counterfeit. There is no discernible law enforcement agency involvement as there is in the case of currency counterfeiting. The market for negotiable loan instruments is more than $12 trillion dollars in the US alone.

Dr. Kelley is an independent consultant. He is paid for his work, not for his opinion. Consulting opinions are by arrangement. A fee schedule is available upon request. A retainer agreement must be signed.

Relevant Experience:

Dr. Kelley worked for the Speech Communication Research Laboratory assisting in research into speech compression and voice recognition while at the University of California Santa Barbara.

Dr. Kelley took courses in digital signal processing and passed the PhD exam in that specialty at the University of California, Santa Barbara. He has also used Wavelet Transform processing to create a digital radio at Litton Industries.

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[4] Specify the color formula, viscosity and drying time. The ink manufacturer can do the rest.

[5] Spot color has been used for decades by the printing industry.

Dr. Kelley uses computer graphics tools for the detection of anomalies in documents and signatures that indicate that they are computer generated altered documents.

Dr. Kelley has experience in the design of airborne radar and Electronic Countermeasures Systems at the following companies:

Raytheon Missile Systems Division Senior where he was Senior Engineer in charge of the computer program development for pulse doppler airborne phased array attack radar. The phased array system was successfully tested at Wright Patterson Air Force base.

Raytheon Electronic Countermeasures Systems where he invented a digital computer capable of collecting, sorting and processing high-density enemy radio emissions for the Advanced Manned Strategic Aircraft, inter alia. Dr. Kelley worked directly for the chief scientist of Raytheon.

At Litton Systems, Dr. Kelley developed and tested a digital signal processing method that increased the target detection range of a wideband receiver by a factor of 4. This permits early detection of enemy aircraft and ground-based threats by fighter jets.

Dr. Kelley used image-processing hardware for the development of software to be used to shoot down shoulder-launched missiles.

As an Engineering Fellow at Chips and Technologies, Dr. Kelley solved disk controller data separation problems and produced a line of PC disk controllers for high volume manufacturing in Taiwan and Hong Kong.

Dr. Kelley has developed and applied cryptographic methods and software for password protection of computer programs and storage systems.

Dr. Kelley designed, manufactured and sold a line of microprocessor in circuit emulators and language translators to electrical engineers and programmers for the development of microprocessor based systems worldwide.

Dr. Kelley is familiar with state and federal court procedures. He has testified in the two cases:

> *Bank of New York v. Didrick,* 20th Judicial District, Collier County, FLA, Case No. 12-3870-CA
>
> *Pembroke v. US. Bank etc et* al, District Court, County of Jefferson, Colorado, Case No. 2014-CV-30592

Dr. Kelley passed Frye Hearing in New York in 2015.

Computer document forensics is a recognized research area in academia, the Association of Computing Machinery ("ACM") and the IEEE.

Dr. Kelley uses image-processing methods to test the authenticity of documents. Some of the images processing methods are mentioned in the "Scientific Examination of Questioned Documents" by Kelly and Lindblom ("SEQD") and in the Forensic Standards of the American Society of Testing Materials. The book is dated and has not been updated since 2006.

Unfortunately, the ASTM forensic procedures have not kept pace with advances in scanner, computer, printer, graphics software, and compression technology. The cutting edge in forgery research is now image processing. The Institute of Electrical and Electronic Engineers ("IEEE") is one of the leaders in detection of image forgery.

For expert witnesses, it is essential that the expert report document all relevant observations and methods. The scientific method requires that all observations and methods be reproducible by others.

Education:

Stanford Executive Institute
Ph.D. University of California, Santa Barbara, Electrical and Computer Engineering
M.S.E.E. University of California, Santa Barbara, Electrical Engineering
B.A. in Mathematics San Jose State University

Specialties:
Chemistry through Organic and Physical Chemistry
Reactor Core Design Physics (General Electric)
Airborne Phased Array Radar

Document Examination Research:
Visual, Ultraviolet and Infra-Red Microscope Analysis of Signatures from 100 pens.
Printing electrical circuits on paper and other material using conductive ink.
Coloring and Printing Signature and Initials on paper using inkjet printers.
Printing Indorsement on paper with overprinting using inkjet printers.
Microscopic analysis of misalignment of paper during overprinting.
Identification of Laser printed forms using digital scanner and microscope.
Use of Adobe Illustrator is placing and printing signatures on paper.
Use of graphical techniques to identifying fabricated documents with Photoshop.
Use of Adobe Illustrator to identify fabricated signatures and documents
Identification of custom ink manufactures for inkjets.
Investigation of plotters, CNC machines, 3-d printers and ink jets for simulating pens.
Analysis of the various commercial machines for the pointing of signatures.
Measurement of ink color using Photoshop.
Detection of satellite ink droplets and tails using microscope data in Photoshop.
Training:
Image Processing, Litton Industries, San Jose, California 1994

Wavelet Signal Processing Litton Industries, San Jose, California 1994
Lightroom 4 –Intro for Photographers, Aperture Academy
Introduction to Printing, Aperture Academy
Adobe Photoshop CS6 Official Training for Adobe Certified Associate Exam 2012
Adobe Illustrator CS6 Video Training Course Chellius and Taylor 2012
2-year training in Digital Signal Processing at University of California Santa Barbara
4-years training in nuclear reactor physics at General Electric Nuclear Energy Division
3-years training in digital phased array radar and electronic countermeasures Raytheon Missile System

Reference Materials:
Adobe Photoshop CC on Demand, Que Publishing July 2013, 602 pages
Adobe Illustrator CC on Demand, Que Publishing June 2013, 602 pages
Photoshop CS All-In-One Desk Reference, Wiley Publishing 2004 805 pages

ASTM Standards:

E2325 Standard Guide for Non-destructive Examination of Paper
E2290 Standard Guide for Examination of Handwritten Items
E2289 Standard Guide for Examination of Rubber Stamp Impressions
E444 Standard Guide for Scope of Work of Forensic Document Examiners
E2288 Standard Guide for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations
E1658 Standard Terminology for Expressing Conclusions of Forensic Document Examiners
E1422 Standard Guide for Test Methods for Forensic Writing Ink Comparison
E2195 Standard Terminology Relating to the Examination of Questioned Documents
E2765 Standard Practice for Use of Image Capture and Storage Technology in Forensic Document Examination

Societies:

Member of the Association of Computing Machinery
Member of the Institute of Electrical and Electronic Engineers (IEEE)
Member of the Signal Processing SIG IEEE
Member of the Computational Intelligence SIG IEEE

Methods Hearing

Computer generated Forensic Methods Used satisfy the Frye Standard. December 1, 2015 New York Supreme Court, see Futterman case below

Partial List of Court Cases

Jonson, et al vs. Northwest Trustee Services, Inc., et al 12-cv-00552-RSL
US District Court, Western District of Washington at Seattle

Hollis and Linda Malin, et al. vs. JP Morgan Chase Bank, NA 3:11-cv-554
US District Court, Eastern District of Tennessee at Knoxville

James B. McDonald v. Onewest Bank, FSB, et al. 2:10-cv-01952-RSL
US District Court, Western District of Washington

Janet Reiner vs. Onewest Bank, FSB, et al. Superior Court of the State of Washington in and for the County of Thurston 11-2-02029-8

Deutsche Bank National Trust Company vs. Mitchell P. Kass and Jacqueline D. Kass, Circuit Court of the Seventeenth Judicial Circuit in and for Broward County Florida 09-09002 (04) SJ

JP Morgan Chase Bank, N.A., vs. Christopher Ardern 12F000958
Lake County Court of Common Pleas, Ohio

Bank of America, NA vs. Marcia A. Wrick, et al. CV-12-775113
Cuyahoga County Court of Common Pleas of Common Pleas, Ohio

HSBC Mortgage Services INC. vs. Joseph Iongi, et al., in the Case No. 130202716
Circuit Court of the State of Oregon for the County of Multnomah.

Peter J. and Joanne E. Workum vs. Washington Mutual Bank, 2:12-ap-01418-SSC
Deutsche Bank National Trust Co., DLJ Mortgage Capital, et al. 2:12-bk-08554-SSC
US Bankruptcy Court for the District of Arizona

Bank of America, et al., v. Cynthia Black, Circuit Court Case No. 49-2009-CA-009062
of the 9th Judicial Circuit, Osceola County, September 2013

Bank of New York Mellon V. Ken Brown, et al., Jackson County Circuit Court, Oregon
Case No. 1308458E2

Fairwinds Credit Union V. Victor Monroy, Verbal Opinion, Seminole County, FL 9/2012

Trustee Services of Carolina V. Kenneth Andresen, South Carolina, 3/2/2013

Jorge and Esther Romero, verbal opinion, Florida 5/21/2013

Pressler & Lehman Brothers, Bank FSB Verbal 7/2013

HSBC Mortgage Services INC. vs. Joseph Iongi, et al., case No. 130202716 in the Circuit
Court of the State of Oregon for the County of Multnomah. 7/2013

Mark and Sheri Yeadaker v. Citi Mortgage, Inc., etc. al., California, 7/2013

Nationstar Mortgage LLC vs. Maria Perdomo, et al. in the Circuit Court of the Sixth
Judicial district In and For Pinellas county, Florida, Case No. 20-CA-006266

Bank of America V. Octavio Pina Florida Case #8:13-bk-12037-ES, 9/ 2013

Donald Karleen v. Countrywide Home Loans, Hawaii, 9/2013

Gary Alexander and Diane Alexander Vs. Capital One, N.A., et al. Case No. 13-2-27723-9 SEA, In the Superior Court of the State of Washington in and for the County of King. 2014

Lucas & Bausch v. Meridian Foreclosure Service and Deutsch Bank National Trust company, et al., Superior Court of California, County of Orange, Case No. 30-2013-00651662-CU-OR-CJC, May 23, 20123.

Margaret Sylvia Ordogne V. Bank of America, NA, et al, The Superior Court in and for the County of El Dorado, Case #PC-20130276

Rivera V. Deutsche Bank National Trust, Adv. No. 14-05108, Oakland, CA Bankruptcy Court

JP Morgan Chase Bank, N.A. v. Enid Futterman, et al., Index No.:6309/2009, Supreme Court, County of Colombia, New York

In re Nathan Topol, US Bankruptcy Court, Nevada, Ch. 7, Case No. Bk-N-10-51214 for the Trustee's attorney Steven Harris

Bank of New York v. Didrick, 20th Judicial District, Collier County, FLA, Case No. 12-3870-CA

Pembroke v. US. Bank etc et al, District Court, County of Jefferson, Colorado, Case No. 2014-CV-30592

Deutsche Bank National Trust Co. v. Glenn D. Augenstein, Henry Circuit Case No. 12-CI-00203, Kentucky.

Select Portfolio Servicing Inc. v. Singer, et al., Case No: CV15-00535, 2nd Judicial District, Reno, NV

William J. Paatalo v. J.P. Morgan Chase Bank, N.A., et al., United States District Court, District of Montana, Billings Division, Case No: CV-13-128-BLG-SHE-CSO

Club Village, LLC, et al., v. CWCapital Asset Management LLC, et al. and CF SBC Pledgor 1 2012-1 Trust, etc.,v. Club Village, LLC, et al., In the Circuit Court of the Fifteenth Judicial Circuit in and for Palm Beach County, Florida, Case No: 50-2012-CA-004753-AN and 50-2012-CA-012536

JPMorgan Chase Bank, N.A., et al. v. Karyn Armstrong, et al., In the Circuit Court of the State of Oregon, In and For the County of Multinomah, Case No. 12115010

John H. Whitney Jr. v. JP Morgan Chase Bank, N.A., et al, Superior Court of Los Angeles, Case No. BC490197, Department 53, July 2, 2015

Patents & Publications:

US PATENT 4,338,660 Relational Break Signal Generating Device	July 6, 1982
US PATENT 7,957,384 B2 Multiple Virtual Local Area Network Databases in a Switch with a Relational Lookup Engine.	June 7, 2011
US PATENT 8,335,780 B2 Scalable High Speed Relational Processor For Databases and Networks.	December 18, 2012